

QUESTIONS ABOUT CARBON

Given the sheer land mass they cover, the nation's forests and agriculture lands hold great potential for sequestering carbon, the process by which plants

capture carbon dioxide from the air and store it in the soil. The carbon stays in the soil until the soil is disturbed through tillage.

Carbon dioxide is a concern because, as a greenhouse gas, carbon

dioxide holds in atmospheric heat, preventing warm air from escaping the atmosphere and contributing to climate change.

Farmers can play a key role in carbon sequestration because crops are

highly efficient at using and storing carbon dioxide. Farmer leaders and government officials agree that, for any meaningful carbon reduction to take place in the United States, farmers must be involved.

Practices such as no-till farming, nitrogen management and planting cover crops are all beneficial for sequestering carbon. Many farmers already utilize those tools for agroeconomic and sustainability reasons. Do those practices also present a financial opportunity for farmers because businesses want to reduce their carbon footprint?

Value to Farmers

Barton, North Dakota, farmer Joshua Stutrud is one of many growers who are curious about the possibility of being rewarded for sustainable farming practices that sequester carbon. Stutrud says that he and his family no-till their crops in order to conserve soil moisture and that they also plant cover crops to address soil-salinity issues and to



Planting cover crops helps sequester carbon and the practice is rewarded in many private carbon markets.

help with weed control.

Farmers can be rewarded for both the no-till and cover crops by a range of private companies that have programs which offer payment to farmers for carbon-storing practices. Stutrud has kept an eye on the development of carbon markets but hasn't yet signed onto one.

"There's potential here, but at the same time, I don't know what type of value there's going to be until there's some sort of a government initiative," Stutrud says, "because what is the value of a carbon credit? There's an unknown value."

According to the American Soybean Association's (ASA) analysis of seven private programs, there is a range of prices that farmers could receive for enrolling acres in a carbon market. Each private program has a different requirement about how many acres must be enrolled. There are also varying contract terms that range from one to 20 years in length. The programs typically use farm data and soil tests to determine if the sequestration goals are being met.

"There are a lot of individual markets out there, and producers can sure take a look at all the different opportunities that there are to determine how it will fit into their program. It's not a one glove fits all type of situation," Kansas farmer and ASA Director Charles Atkinson says.

Atkinson is an active conservation proponent. He's also one of two ASA directors who are serving on the Environmental Services Marketing Consortium (ESMC) Producer's Circle. The ESMC is launching a national ecosystem-services market program that pays farmers and ranchers for quantified, verified, certified and outcome-based soil



Barton farmer Joshua Stutrud is paying attention to opportunities that could be offered by carbon markets, but has yet to sign on.

carbon, net greenhouse gases, water quality and water conservation credits which are earned from regenerative agricultural practices.

Atkinson says that some entities are offering a carbon program to reduce their own carbon footprint while other companies will operate as a broker, connecting companies with willing farmers.

"There's a lot of big companies that want to reduce their carbon footprint, and they're not going to be able to do it unless they have agriculture in tow," Atkinson says. "I've always felt agriculture should be the leader in this area because we know that we're important to accomplish what they want to accomplish."

Early Adopters

The goal of carbon programs is to increase the amount of carbon that is sequestered in the soil. However, like Stutrud, most farmers who have a long history of no-till farming and cover-crop usage would currently be ineligible for most programs. Even

though they may have been sequestering carbon for decades, their farm wouldn't qualify under most current programs. That fact remains a major hurdle to be cleared.

"We've been working with legislators in this area already because there are a lot of producers out there who are early adopters, who are already no-till; they're already doing cover crops; they're doing everything they can to protect the resources they have; and yet, under some of the programs, they are not eligible," Atkinson states. "The last thing we want to do is have someone who has been no-tilling for 25 years tear it up to make a few dollars."

Atkinson explains that the ASA has been talking with officials at the U.S. Department of Agriculture (USDA) about a carbon bank or carbon credit to reward early adopters.

In April, Bayer announced enhancements for their Carbon Program for the 2021-2022 program season includes eligibility for growers who have adopted strip- or

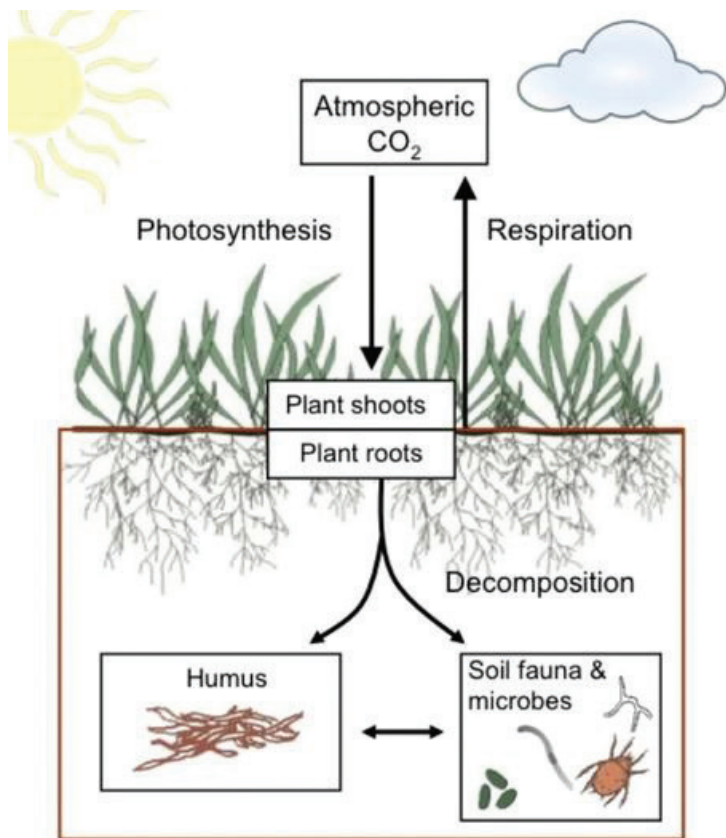
no-till or cover crops on fields on or after January 1, 2012.

Government Role

In January, President Biden signed an executive order that elevated climate policy to be an "essential element" of American foreign policy and national security. The order begins the process of determining the U.S. emission reduction target under the Paris Agreement. Among other things, the order formally established the White House Office of Domestic Climate Policy.

The executive order directs the USDA to involve the agriculture sector in the federal government's efforts and highlights the importance of the American agriculture industry as it relates to renewable energy and carbon sequestration. The order directed the USDA to collect input from farmers and other stakeholders about how to use federal programs to encourage the adoption of climate-smart agricultural practices that produce verifiable carbon

Editor's Note: This article is the first in a series of stories to appear in *The North Dakota Soybean Grower Magazine*; the series addresses the many connections between carbon and agriculture. Through sustainable farming practices, farmers are recognized as having a huge potential influence on carbon sequestration, which reduces carbon dioxide, a greenhouse gas. Carbon markets are emerging as potential opportunities for a farmer to potentially get paid by companies that are looking to improve their carbon footprint. In the coming issues, we'll take a closer look at the potential for farmers.



Soil Carbon Storage Cycle

reductions and sequestrations as well as creating new income sources and jobs for rural Americans.

“The opportunity here is to create incentives and markets that reward producers, that reward landowners for good agricultural and forestry practices,” Robert Bonnie, deputy chief of staff for policy and a senior climate adviser to the USDA secretary, (nominated by President Joe Biden to serve as undersecretary for Food Production and Conservation (FPAC) in mid-April) told participants at a recent virtual conference which was focused on carbon. “If you think about broader climate

goals, reaching net zero by 2050, agriculture has a really important role to play, as does forestry. It’s hard to figure out how you get to those numbers without the active participation of agriculture and forestry.”

Bonnie says that any sort of government carbon program would be about voluntary participation.

“It’s going to be about markets and incentives, and I think, at USDA, we want to work with everyone to figure out what’s the right mix of policy, science and other investments that can help make that happen,” Bonnie explains.

Atkinson states that the ASA wants to make sure the carbon market is on the free market and not a government mandate, but there likely needs to be some help from the USDA to reward the early adopters.

Change Coming

Atkinson admits that farmers still have many unanswered questions about carbon programs and any



Keeping carbon in the soil keeps it from being released into the atmosphere as carbon dioxide, a greenhouse gas.

government involvement. Among the most frequent questions he hears from other farmers is about early adopters. He also hears other concerns from growers, including disadvantages of long-term no-till that farmers may face if they want to retire and rent their ground to new farmers.

“What’s the benefit of other farmers renting my no-till ground when they can rent someone else’s conventional ground and get the carbon credit, knowing they’ve got the potential for more income to offset their rental rate?” Atkinson asks.

Farmers are also concerned about

the cost of making changes to their operations so that they qualify for carbon programs and even about transitioning farms.

The carbon market may be in its infancy, but Atkinson expects greater clarity on the issue in the coming months, which will be welcome news to farmers.

“I’m definitely going to keep my eye on it,” Stutrud says. “But there’s still a lot of red tape to cut through to get clarity.”

—Story and photos by Daniel Lemke, graphic courtesy of Science Education Resource Center at Carleton College



Robert Bonnie